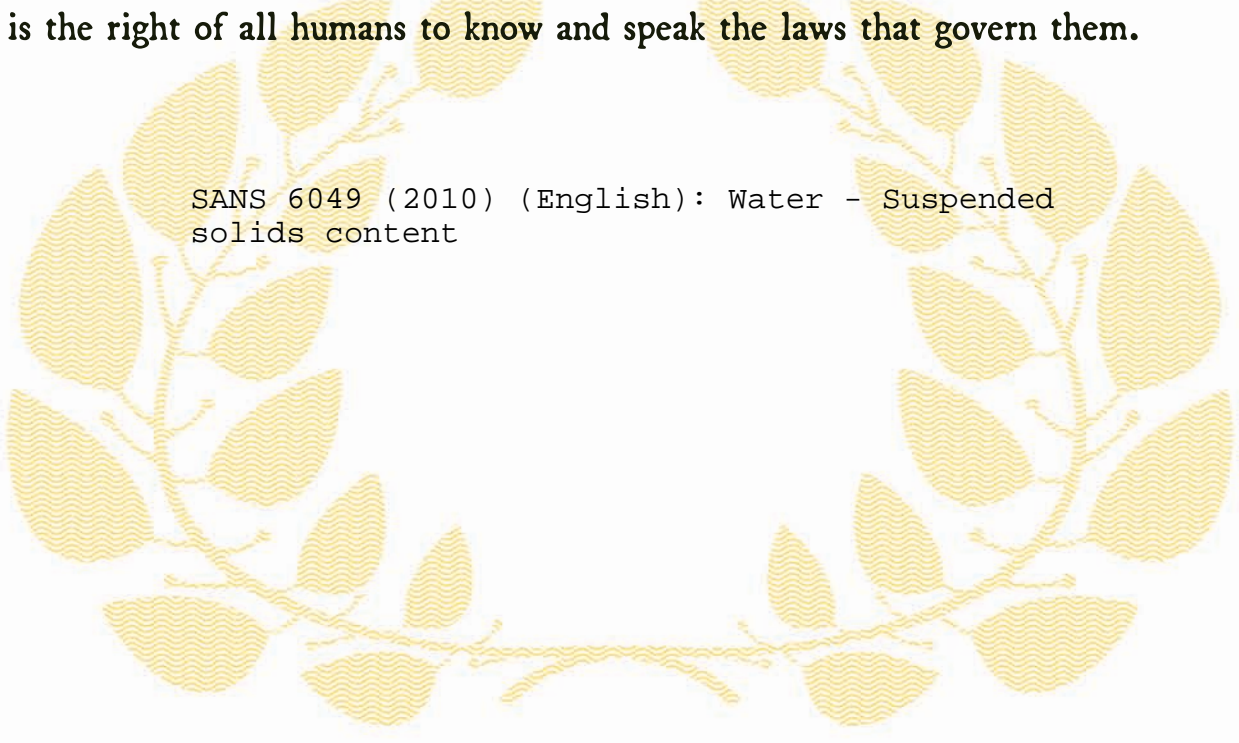




# *Republic of South Africa*

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SANS 6049 (2010) (English): Water - Suspended solids content



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**SANS 6049:2010**

Edition 2.2

# **SOUTH AFRICAN NATIONAL STANDARD**

## **Water — Suspended solids content**

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Published by SABS Standards Division  
1 Dr Lategan Road Groenkloof ☒ Private Bag X191 Pretoria 0001  
Tel: +27 12 428 7911 Fax: +27 12 344 1568  
[www.sabs.co.za](http://www.sabs.co.za)  
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# **SANS 6049:2010**

Edition 2.2

## **Table of changes**

<b>Change No.</b>	<b>Date</b>	<b>Scope</b>
Amdt 1	2004	Amended to change the designation of SABS standards to SANS standards and to update referenced standards.
Amdt 2	2010	Amended to update referenced standards.

## **Foreword**

This South African standard was approved by National Committee SABS SC 147A, *Water – Water sampling and analysis*, in accordance with procedures of the SABS Standards Division, in compliance with annex 3 of the WTO/TBT agreement.

This document was published in April 2010.

This document supersedes SANS 6049:2004 (edition 2.1).

A vertical line in the margin shows where the text has been technically modified by amendment No. 2.

## **Water — Suspended solids content**

### **1 Scope and field of application**

This standard specifies a method of measuring the concentration of suspended solids in water and in wastewater.

The method is applicable to the determination of suspended solids in homogeneous samples. Therefore large floating particles and any other materials that are extraneous to the sample, e.g. leaves, twigs, etc., shall be removed and the sample shall be fully mixed before subsampling.

The filtrate from this test can be used for determining the dissolved solids content in accordance with SANS 5213, when so required.

### **2 Normative references**

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies. Information on currently valid national and international standards can be obtained from the SABS Standards Division.

**Amdt 1**

SANS 111/ISO 835, *Laboratory glassware – Graduated pipettes.*

**Amdt 1; amdt 2**

SANS 112/ISO 648, *Laboratory glassware – Single volume pipettes.*

**Amdt 1**

SANS 115/ISO 385, *Laboratory glassware – Burettes.*

**Amdt 1; amdt 2**

SANS 128/ISO 1042, *Laboratory glassware – One-mark volumetric flasks.*

**Amdt 1**

SANS 3696/ISO 3696, *Water for analytical laboratory use – Specification and test methods.*

SANS 5213, *Water – Dissolved solids content.*

### **3 Principle**

The suspended solids content is determined by the quantitative filtration of a sample test portion through a glass fibre filter and gravimetric determination of the retained residue on the filter after drying at  $105\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ .

### **4 Apparatus**

**4.1 Drying oven**, for operation at  $105\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ .

**4.2 Analytical balance**, readable to 0,1 mg.

**4.3 Glass fibre filter**, of diameter between 70 mm and 110 mm and of nominal pore size  $1,0 \mu\text{m} \pm 0,2 \mu\text{m}$ .

**4.4 Filtration apparatus**, consisting of a Buchner funnel or a three-piece filtration funnel of a suitable size and capacity.

**4.5 Suction flask**, Buchner flask of capacity at least 1 L.

**4.6 Desiccator**, containing colour-indicated desiccant.

**4.7 Glassware**. Where applicable, only use burettes, pipettes and volumetric flasks that comply with the requirements for class A items as specified in SANS 111, SANS 112, SANS 115 and SANS 128, as relevant.

**Amdt 1; amdt 2**

## **5 Procedure**

NOTE Unless otherwise specified, only use water that complies with the requirements of SANS 3696.

### **5.1 Preparation of glass fibre filters**

**5.1.1** Insert the glass fibre filter (see 4.3) into the filtration funnel and wash over a vacuum with approximately 200 mL of water. Continue suction until the excess water has been removed from the filter. Discard the washings.

**5.1.2** Transfer the filter to a suitable tray and dry at  $105 \text{ }^{\circ}\text{C} \pm 2 \text{ }^{\circ}\text{C}$  for 2 h.

**5.1.3** Cool in a desiccator for at least 30 min.

**5.1.4** Weigh the filter to the nearest 0,1 mg and record its mass.

### **5.2 Filtration of sample**

**5.2.1** Insert the glass fibre filter into the filtration funnel.

**5.2.2** Apply suction and wet the entire surface of the filter with a small volume of water. Discard the filtrate, if any.

**5.2.3** Choose a suitable sample aliquot.

NOTE The aliquot size should be as large as possible, e.g. 500 mL, with the limitation that the residue should not be so excessive as to result in filter clogging. The filter paper should at least be visible over the radial regions of the funnel apertures after filtration.

**5.2.4** Transfer the aliquot, portion by portion, to the funnel and ensure that the filter surface remains flooded during filtration.

**5.2.5** Remove and retain the filtrate for later determination of dissolved solids and soluble constituents if required.

**5.2.6** Wash down the funnel walls and the filter paper with approximately 50 mL of water and continue suction until the excess water has been removed from the filter.

**5.2.7** Transfer the filter onto a suitable tray and dry at 105 °C ± 2 °C for 2 h.

**5.2.8** Cool the filter in a desiccator and weigh to the nearest 0,1 mg.

## **6 Expression of results**

The suspended solids content at 105 °C, expressed in mg/L, is given by the formula

$$\frac{(m_1 - m_0) \times 1\,000}{V}$$

where

$m_0$  is the mass of the filter, in milligrams;

$m_1$  is the mass of the filter and dried residue, in milligrams;

$V$  is the volume of sample aliquot chosen, in millilitres.

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